THE INDO-EUROPEANS IN GREECE: AN ANTHROPOLOGICAL APPROACH TO THE POPULATION OF BRONZE AGE GREECE

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Bronze Age (Helladic individuals of the Greek mainland and islands were studied by multivariate methods. A certain morphological homogeneity of the individuals from the three cultural phases (Early, Middle and Late Helladic) was recognized and this was taken to be evidence against the assumption of influence of foreign elements. An interesting morphological similarity of a "royal" individual from Dendra in the Peloponese with ordinary people of the Early and Late Helladic period was noticed. However, final solution of the problem needs more skeletal material.

Different theories may be expounded for the origins of the Bronze Age civilisations in Greece, but most of them are usually connected with the question of the origins of the Greek language. The presence of non-Greek place names with the suffixes *-nth-*, *-ss-*, etc. may suggest the early (linguistic) presence of a "population" (Haley and Blegen, 1928) or the coming of a "population" in the final Neolithic or in the Early Bronze Age, of unknown origins, which did not speak Greek (Sakellariou, 1977).

It is quite widely assumed that this population (Pelasgians?) was replaced by the Greeks, speaking a proto-Greek (Indo-European) language, who entered the country during the Early Bronze Age (EBA) or in the transition period EBA/MBA.* The material manifestation of this replacement were the appearance and cultural dominance of the so-called Minyan ware (Wace and Belgen, 1918). Today we know that the Minyan ware represent a local evolution (French, 1973).

It is also true, that at the beginning and during the third millennium B.C. in mainland Greece and especially in the Aegean islands cultural changes occur, whose cause can be interpreted in different ways:

* Other theories, assuming a later migration of the Greeks (Late Helladic) were not considered here. For a discussion on this problem see Xirotiris, 1979, 1980a.

a) The introduction of a new cultural strain, especially from the north, also offer hope of a correlation with the linguistic problems arising from the distribution of the Indo-European languages (Gimbutas, 1973; 1980; Crossland, 1973). Gimbutas (1973) correlated the beginning of the Early Helladic period (EH) II with the infiltration of the Indo-European components. The earlier manifestation is the tumuli cemetery of Nydri on the island of Leukas, which were excavated by Dörpfeld (1927). With a few exceptions, the dead were cremated – although often incompletely – and many of the finds were damaged by fire. As Häusler (1976) pointed out, cremation is foreign to the "Kurgan-people" between the Urals and the Carpathians. The metal weapons, mainly daggers and spearheads, are closely similar to those of the "royal" tumulus of Mala Gruda in Montenegro (Gimbutas, 1973), or to those of the Aegean culture itself (Renfrew, 1972). The pottery finds (especially the so-called sauce-boats) place this cemetery in the Aegean Early Helladic II Korakou culture (Renfrew, 1972), although it is possible that this culture persisted on Leukas until the beginning of the Middle Helladic period (MH). Furthermore a series of tumuli have been excavated mainly in western Peloponnese and occasionally in Attica and northern Greece, which however is of late MH date.

b) Limited movements of population may have occurred within the Aegean, but there seems no good evidence for the arrival in significant number of immigrants from outside at any time after the inception of the Aegean Early Neolithic.

The manifestation of migration or a local evolution are mostly a purely biological problem and belong to the field of physical anthropology. For a long time far reaching conclusions of population genetics have been deduced on the basis of archaeological and linguistic evidence, such as pottery decoration and word similarities. However, as the great number of conflicting theories have shown, this is not the most promising approach.

On the other hand, it is also true that the determination of quantitative and qualitative biological changes is particularly difficult for the following reasons:

a) The available skeletal material from the countries concerned (Ukraine, Romania, Bulgaria, Yugoslavia, Hungary, Anatolia) is very scarce and often unexactly dated and thus it can only be used with great caution.

b) Our methods of comparison, however highly developed and mathematically and statistically sophisticated, are far from able to give us a realistic reconstruction of past populations.

It was necessary to mention these points in order to indicate the possibilities and limitations of anthropological research on prehistoric populations and also for the final results of this study to be judged in the proper light.

There are a few experimentations which try to compare populations over large areas (Menk, in this volume; Xirotiris, 1980a, 1980b), but they are mostly based on insufficient skeletal material. Although both studies indicate a relative phenotypic similarity between the Ukrainian (Kurgan) and the northern Southeast European series of the period under discussion, the phenotypic heterogeneity of the individuals in each series, especially the Ukrainians (Zinevich and Kruts, 1968), strongly influence the validity of the results.

Therefore it seems at any rate for the time being to be more useful to investigate the morphological structure of individual series to determine micro-evolutionary phenomena of the period in question and their geographic parition. The following Bronze Age series of Greece were available:

Early Helladic period: 1) Hagios Kosmas (Attica) 2) Gortys (Crete) 3) Syros island 4) Paros island 5) Antiparos island 6) Naxos island 7) Thermi, Lesbos island.

Middle Helladic period: 1) Asine (Argolis) 2) Eleusis (Attica) 3) Vorou (Crete).

Late Helladic period: 1) Argos (Argolis) 2) Mycenae (Argolis) 3) Tiryns (Argolis) 4) Dendra (Argolis) 5) Nauplion (Argolis) 6) Metaxata (Kephallinia island) 7) Mazaracata (Kephallinia island) 8) Lakithra (Zante island) 9) Markopoulon (Attica) 10) Thebes (Boeotia) 11) (Thespiai (Boeotia) 12) Kallithea (Boeotia) 13) Amphikleia (Boeotia) 14) Tanagra (Boeotia 15) Hagios Antonios (Thessaly) 16) Thrace (unknown origin).

The individuals come from all over Greece and are, furthermore, irregularly distributed over time and area. They are therefore not so much a representative cross-section, but a random sample. They were, however, all measured by one researcher using a constant method. Only data from male skeletons were used in the factor-analysis (using Menk's program, Geneva). The reason for this was that, according to present hypothesis concerning the Kurgan people, almost only male graves are

found (Gimbutas, 1973). From 38 skull measurements 10 factors were formed and the results of multidimensional distances were as follows:

Group 1, Early Helladic (Fig. 1): Cluster A1 contains individuals from the mainland and the islands with strong phenotypic similarities, which could indicate a Mediterranean racial stock. The same applies to the Syros individuals. There are a few individuals (from Hagios Kosmas, Paros and Naxos islands) which form sub-clusters, probably indicating a morphological variability of small isolated population groups.

Group 2, Middle Helladic (Fig. 2): The major component of this cluster are the relatively numerous individuals from Asine, although a few individuals from further afield (as from Eleusis and Vorou in Crete) are also included forming a certain phenotypic homogeneity. As before, the Mediterranean racial stock is the main determining factor. Three individuals from Asine, although attached to this cluster, diverge with their meso-and brachy-crany strongly from the main cluster.

Group 3, Early and Middle Helladic (Fig. 3): One of the main aims of this clustering is the determination of differences between Early and Middle Helladic individuals (Middle Helladic individuals mainly originate from the mainland). In subcluster A3 Early Helladic individuals from the mainland and the islands are mixed with a few Middle Helladic subjects. The main component of this cluster are Early Helladic and all Cretan (EH and MH) individuals. Sub-clusters A4, A5 and A6 to contain various degrees of mixing of Early and Middle Helladic individuals. The interesting mixture of Early Helladic islands with Middle Helladic mainland individuals could indicate a racial homogeneity.

Group 4, Early, Middle and Late Helladic (Fig. 4): This cluster groups together all Bronze Age (Helladic) individuals. There is an almost homogenous distribution of continental and islands individuals, both from the EH and MH period. Those individuals who in previous runs (groups 1-3) diverged from the main clusters are again found forming a separate sub-cluster in this run.

Cluster A1 can be called Mediterranean. There is no clear cluster for Middle Helladic individuals, which might indicate an introduction of racial foreign elements. The inclusion of Mycenaean individuals from the royal graves, particularly of the shaft grave circle B, (which is in preparation), will be of great impor-

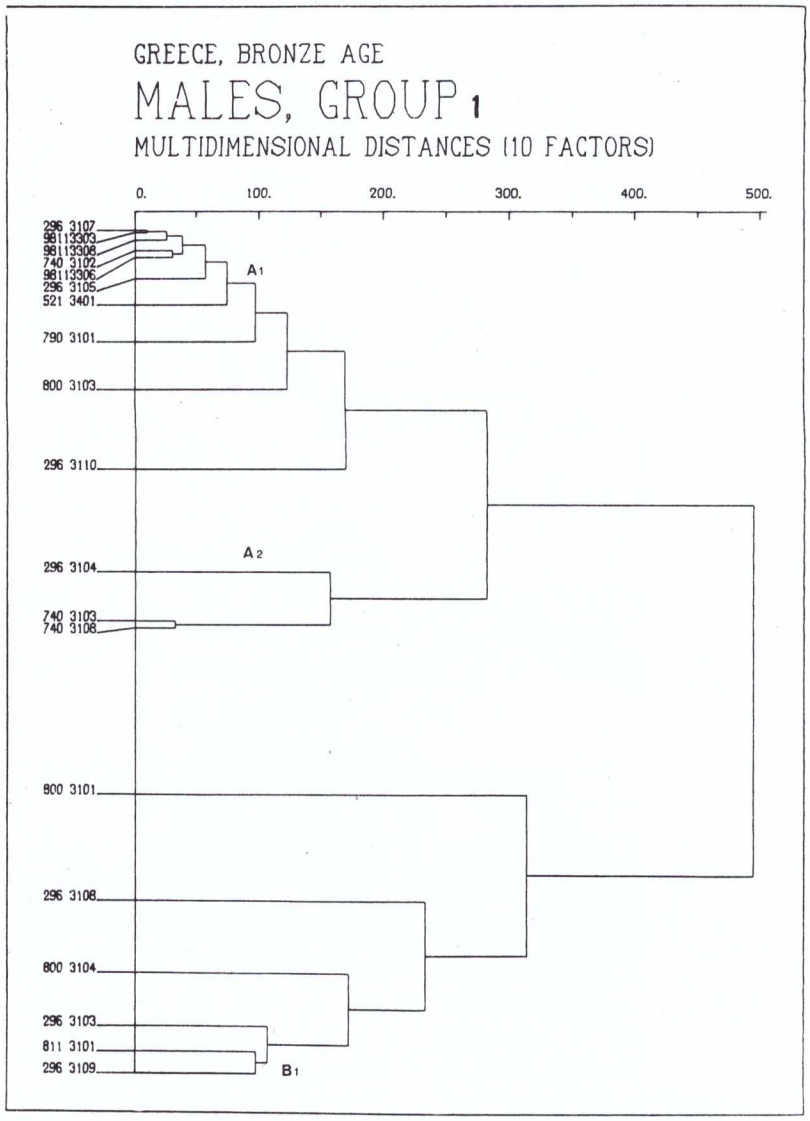

Fig. 1

296 = Hagios Kosmos
981 = Gortys
740 = Syros
800 = Paros
790 = Antiparos
811 = Noxos
521 = Thermi

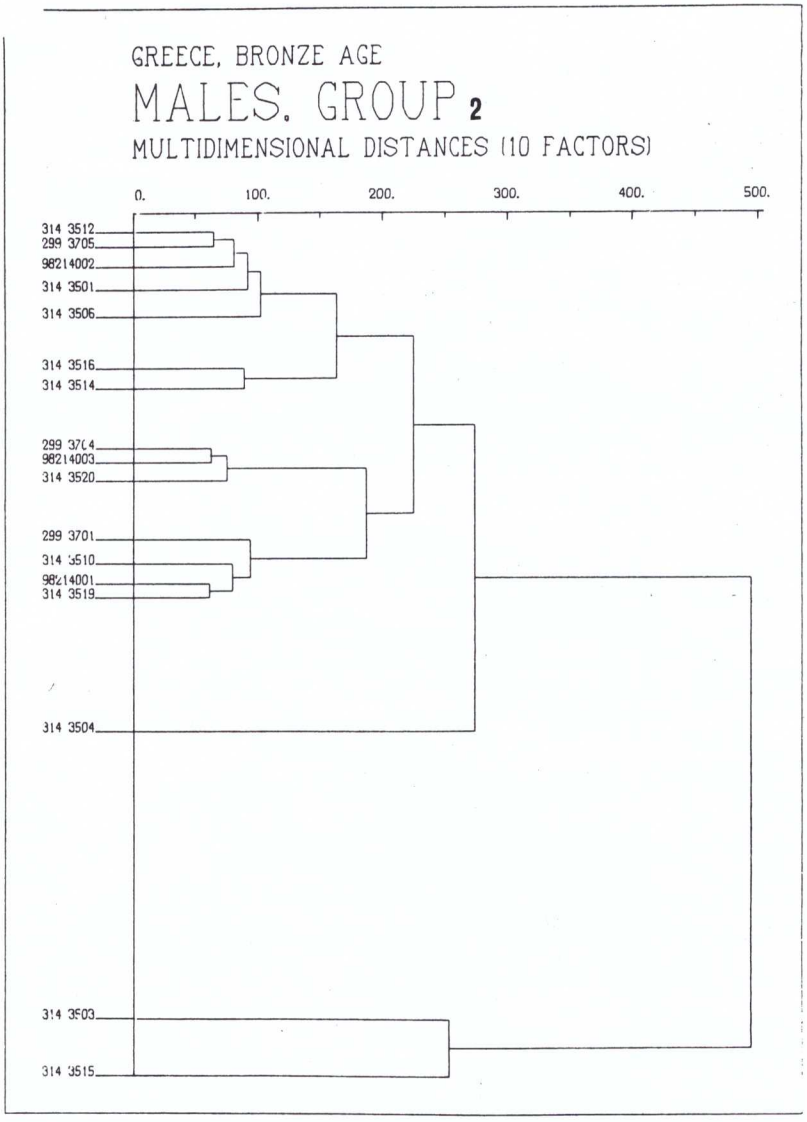

Fig. 2
314 = Asine
299 = Eleusis
982 = Vorou

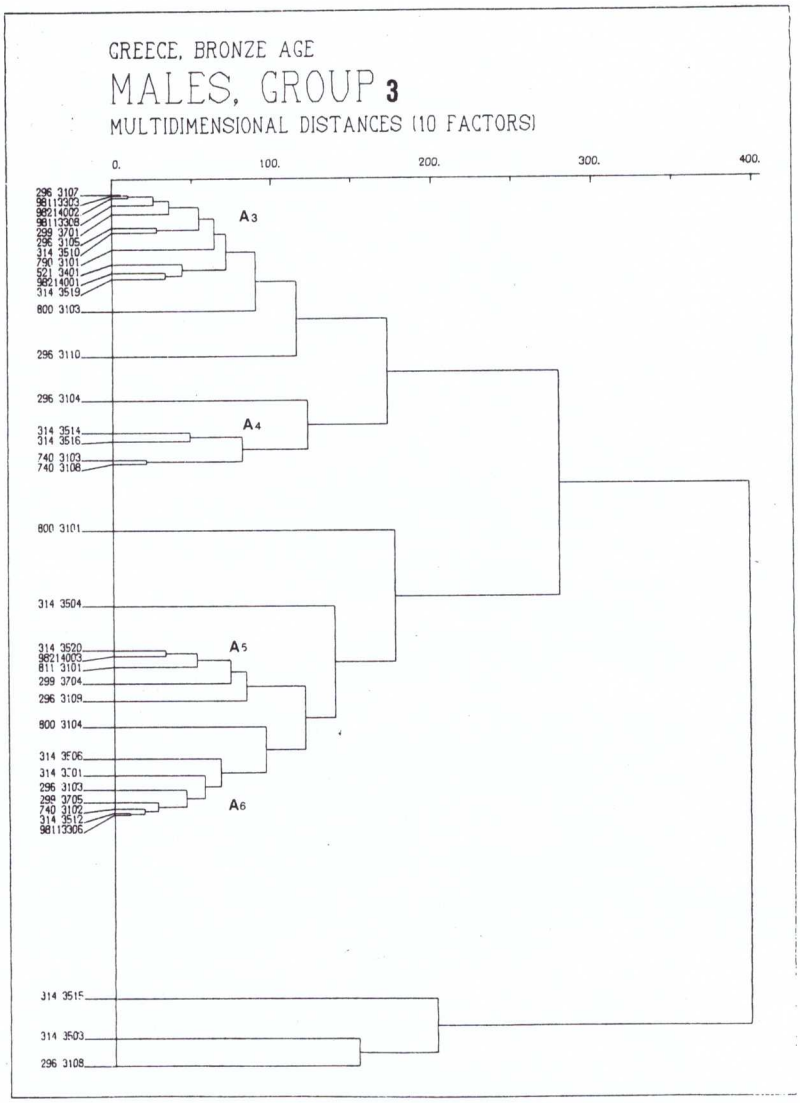

Fig. 3
(see Figs. 1 and 2)

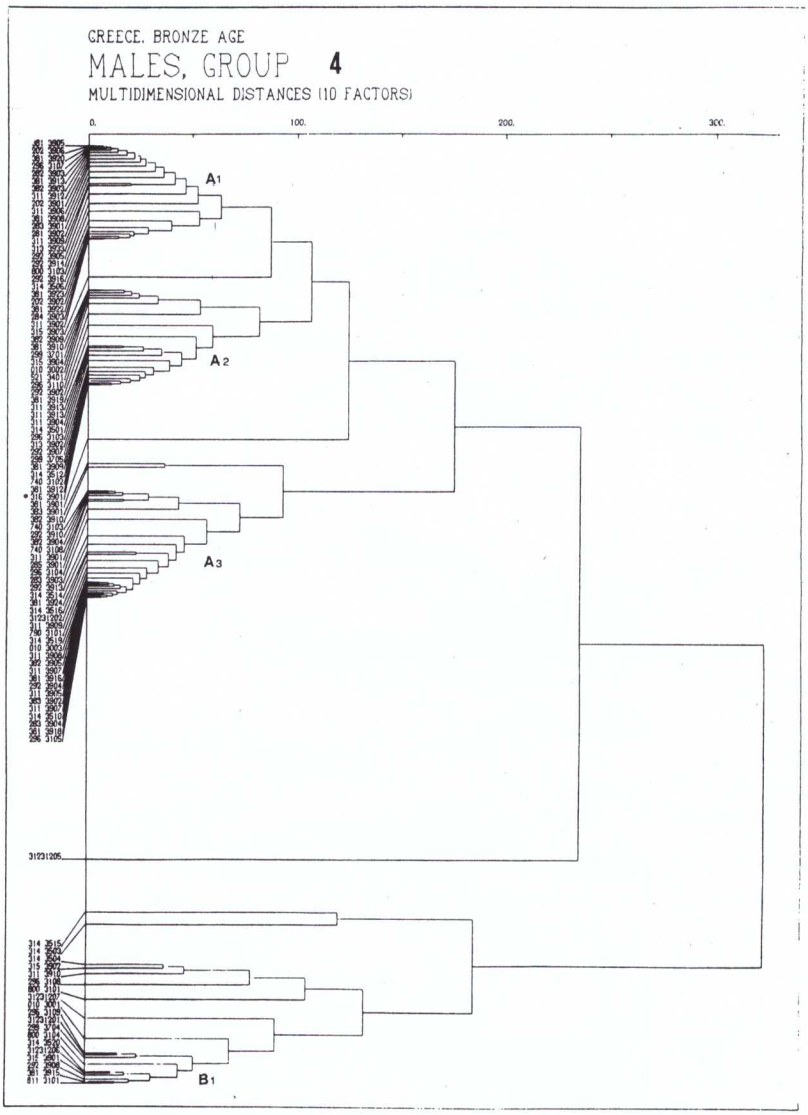

Fig. 4

315 = Argos	381 = Netaxata	283 = Thespiai	010 = Thrace
311 = Mykenae	382 = Mazarakata	284 = Uallithea	see also
312 = Tiryns	383 = Lakithra	285 = Amfiuleia	Figs. 1 and 2.
316 = Dendra	292 = Markopoulon	282 = Tanagra	
313 = Nauplion	281 = Theben	202 = Hagios Antonios	

tance. So far only one male skeleton of the royal grave from Dendra in the Argolis (ind. Nr. 316.39.01) has been included. It clusters together with two "ordinary" inhabitants. one Late Helladic from Metaxata, Kephallinia island and an Early Helladic from the island of Syros. This may be an indication that the "upper social" class came directly from the old population (racial) stock. However, the sample is too small to allow generalisation of this tentative statement.

Conclusions

The male individuals of the Bronze Age period of Greece investigated here, show a morphological homogeneity, even though they often come from geographically separated places. An interesting result was the formation of clusters containing both Early Helladic islands and Middle/Late Helladic mainland individuals. In Crete Early and Middle Bronze Age individuals are clustered closely together. Even though a few Early Helladic (Hagios Kosmas) and Middle Helladic (Asine) individuals diverse strongly, it should be remembered that these two harbortowns are likely to show a large variability in their population structure, migration is not therefore the only explanation.

In addition, morphological studies of the Early Helladic cemetery and the Middle Helladic tumulus in Tsepi/Marathon, also of Middle Helladic graves in Volos, have shown that the main racial component is the gracile Mediterranean. Perhaps it is important that the royal individual from Dendra shows close morphological relationship with the average local population clearly excluding foreign origin.

ZUSAMMENFASSUNG

Es wurden bronzezeitliche (Helladische) Individuen vom griechischen Festland und den Inseln mit Hilfe multivariater Methoden untersucht. Eine gewisse morphologische Homogenität der Individuen der drei kulturellen Stufen (Früh-, Mittel-, und Spät-Helladisch) ist festzustellen, was gegen die Annahme einer Einwanderung von fremden Elementen sprechen konnte. Interessant ist die morphologische Ähnlichkeit eines Individuums aus den Königsgrab von Dendra/Peloponnes mit einfachen Bürgern des Früh-und Spät-Helladikums. Für eine endgultige Lösung des Problems der "Zuwanderung" ist mehr Skelettmaterial nötig.

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